Information Superiority M&S Master Plan

Objective 2

C4ISR/M&S Interoperability

Greg Giovanis DISA
giovanig@ncr.disa.mil

C4ISR IS M&S MP TASK 2

Improve the Integration of Simulations with Real C4ISR Systems

A2-1: Determine the severity of the C4ISR systems and M&S compatibility problems, establishing cost-effectiveness boundaries.

A2-2: Establish long-term common goals for the integration of M&S and C4ISR. Combine this with Service efforts.

A2-3: Enumerate and prioritize initiatives required to meet the goals established by Action

A2-4: Investigate mechanisms for supporting the use of M&S within the Defense Informatio Infrastructure (DII) Common Operating Environment (COE), to meet Operational and Training requirements.

A2-5: Develop a set of "needs" for Joint decision-support tools commensurate with the visio proposed in the ABIS study and assess the state-of-the-art in tools for this purpose.

A2-6: Develop a set of initiatives for developments of the required Joint-use C4ISR decision-support tools

C4ISR IS M&S MP TASK 2

Approach

- Solicit input from all relevant DoD sources
- Initial focus will be areas where ASD(C3I) has involvement
- Define tasks in the investment strategy to investigate areas not fully covered

Task A2-1

Determine severity of C4ISR and M&S compatibility problems establishing cost-effectiveness boundaries

- **Established Groups have studied compatibility problems related to C4ISR interoperability requirements:**
  - **DMSO, AMSO (SIMCI), NMSO, AF ESI, AFAMS, JSIMS, JWARS, NETWARS**
  - **DII COE TWG, SISO, JFCOM, JSIMS, JWARS, NETWARS, etc….**
  - Leverage these efforts to prioritize valid requirements for actual projected system development/use in the next 5 years.
  - Separate legacy or tactical sensor integrated systems from open system C4ISR systems
  - Determine areas of commonality for joint investment (ie:COE).

- **Prioritize cost effective remediation based on:**
  - Commonality between C4ISR systems/services, and joint user population
  - Warfighting impact (tactical battlefield effectiveness vice deliberate planning, analysis etc)
  - Need for access to **TIME CRITICAL** C4I databases and information flow
  - Re-usability of solution (methodology, software)
  - Alignment with 5 year projected C4ISR and simulation architecture developments (Investment/developments meet future needs and potential, vice “tail chase” development)

Task A2-2

Establish long term common goals for the integration of M&S and C4ISR combined with service efforts.

Involve BOTH the M&S service and Joint constituency under DMSO and DIICOE M&S TWG lead to:

- Review their requirements and goals for C4ISR/M&S interoperability and integration for their respective service C4ISR/M&S systems

- Establish a Joint Forum for advocating C4ISR and M&S system architectures to support these goals with:
  - Full service and Joint Staff participation
  - Reflect these joint requirements, based on service input
  - An ongoing review process of joint interoperability/integration plans for:
    - Adequate funding
    - Operational relevance
    - Compatibility with emerging architectures/technology
    - Commonality with service developments

- Periodic reports to DoD level oversight

Task A2-3

Enumerate and prioritize initiatives required to meet the goals by action A2-2

Utilize the Joint Forum concept established in A2-2 to
Recommend initiatives to meet common goals/requirements to e

- **Tactical Decision support/planning (time critical)**
- **Deliberate Decision support/planning**
- **C4ISR network/system testing**
- **Acquisition via operational scenarios**
- **Instrumented range integration into C4ISR**
- **Situational Awareness of synthetic operational pictures (domain**
  - Electromagnetic “COP”
  - Acoustic”COP”
  - CBR “COP”
  - Intelligence”COP”
  - Communications Network “COP”
- **Varied time bases for the C4ISR system displays**
- **Tactical C4ISR network connectivity topology and monitoring**

Task A2-4

Mechanisms for DII COE M&S support

Utilize the Joint Forum concept established in A2-

- Review current state of DII COE intrinsic M&S support and projected development vs. M&S requirements
- Investigate M&S requirements with respect to:
  - Potential for future enhanced M&S integration with DII-COE
  - Types of new information available in standard formats
  - Evolving Object Oriented character of DII-COE
  - Direct integration of models and simulations into DII COE applications
- Recommend DII COE enhancements/changes to support M&S u
- Provide forum for service/agency sharing of COE expertise

Task A2-5

Develop needs for Joint Decision Support tools

Short-Term Focus:

- **Empanel a working group of current users of M&S based C4ISR Decision Support tools:**
  - JDSC, DMSO, AMSO, NMSO, AFMSO, DTRA, DARPA, CINCPAC, etc
- **Review current requirements/usage/vision/development for decision support in C4ISR systems**
- **Review current tools/applications/federations used for this purpose**
- **Develop a set of tasks that support high priority Decision Support requirements**

Task A2-6

Develop initiatives for Joint Decision Support tools

Long-Term Focus:

Subset of the Joint Forum discussed in A2-2 specifi
advocate M&S based C4ISR Decision Support tool

Periodically:

- **Review current usage/vision/requirements as technology changes**
- **Review current tools/applications/federations used for this purpos**
  vice C4ISR system architecture
- **Focus C4ISR developments in Joint Decision Support by a process o**
  matching funding of proposals/initiatives with a user base and
  operational requirements

Action Plan

Two Part Strategy; near-term/long-range

- Draft investment strategy required by Mar 15
  - Utilize existing WGs to coordinate Service inputs
  - Invite participation by joint organizations with stake
  - Push for 70% solution, with knowledge that revision is in long term plan
  - Outline investment strategy to fix obvious common shortfalls
- Long Term task to treat M&S Master Plan an living docum
  - Regular revision based on current technology, changing requirements
  - Regular reports to DoD and service oversight
  - Re-alignment of investment plan to meet current priorities
- Joint Forum formally chartered by Services/DoD at appropriate level
  - Oversight review by Services/ DoD
  - Technology and development focus vice policy